Issue List and Work Plan for the 2002 Triennial Review of the Water Quality Control Plan for the Tulare Lake Basin

Introduction:

To meet requirements of Section 303(c) of the Federal Clean Water Act and Section 13240 of the California Water Code, the Central Valley Regional Water Quality Control Board reviews the water quality standards contained in the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) every three years. This Triennial Review (TR) consists of conducting a public workshop to receive comments on water quality problems in the Basin and preparing a work plan that describes the actions the Regional Board may take over the next three years to investigate and respond to the problems. Implementation of the work plan depends upon the Regional Board's program priorities, resources, and other mandates and commitments. Crucial to successful implementation of the actions is adequate support of the Regional Board's Basin Plan activities.

The Regional Board began its 2002 Triennial Review for the Tulare Lake Basin Plan by providing a 45-day public notice, culminating in a public workshop, to solicit comments on water quality problems. The public notice (Attachment A) contained a brief description of some problems identified by staff. The notice was mailed to the 684 entities on the Basin Plan mailing list. A shorter notice (Attachment B) was published for one day in each of the four major newspapers covering the Tulare Lake Basin area (Attachments C).

The public workshop was held during the regularly scheduled Regional Board meeting on 26 April 2002 to receive oral comments. Attachments D and E are copies of the official agenda and minutes, respectively, of the 446th meeting of the Regional Board at which the TR public workshop was held. Comments submitted after the public workshop were also considered in this review. The Board received a total of 13 commenters. Responses to these comments are contained in Attachment F.

The issues listed below reflect the water quality problems identified from public comments received during the review period and staff knowledge about problems in the Basin. The Regional Board does not propose to proceed directly with amendments to the Basin Plan as a result of this Triennial Review. The proposed actions consist of recommended investigations to determine the following:

1. Whether a problem exists;

2. The extent, source, frequency, duration, and magnitude of the problem;

3. Whether the problem can be resolved through a change in the way the Regional Board implements, enforces or otherwise gains compliance with existing standards; and

4. Whether the problem must be resolved through amending the Basin Plan.

Two levels of actions are specified. Current Actions represent the staff's best judgment about what can be done from Fiscal Year (FY) 02/03 through FY 03/04 to address the issue with available resources. Additional Actions depend on more resources becoming available. The priority for each issue indicates the order to address the issues.

Resources to support basin planning activities are very limited. The Regional Board's annual budget to support basin planning activities regionwide is 0.6 Person Years (PY). From this resource, the Regional Board must conduct triennial basin plan reviews and prepare and propose amendments to the two Basin Plans that cover the Central Valley Region. The FY 01/02 allocation was exhausted conducting the two triennial reviews. A new triennial review will need to be completed three years from now. This leaves 1.2 PYs for 2 years (the two years between Triennial Reviews) to consider issues that may warrant revisions to the two Basin Plans. Existing resources only allow a small portion of the highest priority issues to be addressed. For some high priority issues, resources from other programs can be used for some of the policy and technical development and review but often, as with federal nonpoint source grant funds, those resources cannot be used for basin planning activities. For example, resources from the Bay Protection and Toxic Cleanup Program were used to monitor and develop cleanup plans for mercury and dissolved oxygen. These cleanup plans will form the basis for a total maximum daily load allocation (TMDL). Portions of the TMDL need to be incorporated into the Basin Plan. The Basin Plan amendment activities associated with incorporating the TMDL into the Basin Plan are not eligible for funding from most other funding sources.

Based on the staff analysis, the following issues have been identified as high priority for the Tulare Lake Basin.

- Groundwater Assessment
- Groundwater Quality Objectives for Salinity
- Electrical Conductivity Effluent Limit
- Waivers
- Salinity in the Lower Kings River

As previously indicated, the regionwide annual budget for FY 02/03 and FY 03/04 is 0.6 PY for the region. From this budget, staff recommends that 0.5 PY be allocated to triennial review issues in the Sacramento-San Joaquin Rivers Basin and 0.1 PY be allocated to work on the groundwater issues of the Tulare Lake Basin.

The Regional Board is identified as the funding source for a Primary Action if the issue can be funded by the 0.1 PY already in the budget. The State Water Resource Control Board (State Board) is identified as the funding source for Actions not yet in or anticipated for future Regional Board budgets, i.e., those beyond FY02/03 and 0.1 PY. The State Board is also the most likely funding source for Additional Actions.

The issues selected for the 2002 TR represent major water quality concerns derived from what is currently known about them. Knowledge about pollution problems may change significantly from one year to the next.

Issue 1: **Groundwater Assessment**

Discussion: The Tulare Lake Basin is essentially a closed basin because surface water only drains north into the San Joaquin River Basin in years of extreme rainfall and because there is little subsurface outflow. Degradation of groundwater in the Tulare Lake Basin by salts is unavoidable without a plan for removing salts from the Basin. The Regional Board considers a valleywide drain to be the best technical solution, but the drain does not appear to be imminent. The only other solution is to manage the rate of degradation by minimizing the salt loads to the groundwater body. The Regional Board's programs to manage salt increases are contained in the Basin Plan and focus on reducing incremental salt increases in municipal and industrial wastewaters. An assessment of the present groundwater conditions is desirable to determine whether existing programs have been effective in protecting groundwater. The groundwater monitoring network described in the Tulare Lake Basin Plan was never established. The monitoring network is essential to track trends in water quality and data from the network is needed to review the groundwater quality objectives for salinity and effluent Electrical Conductivity (EC) limits.

Many of the water agencies within the Tulare Lake Basin have groundwater management plans which include monitoring programs. Staff should work with the water agencies to share information in protecting water quality and implement a modified network that might meet the Regional Board needs. Water agencies and staff should identify areas within the Tulare Lake Basin where the groundwater is adversely impacted by salts and chemicals to the extent that the groundwater no longer supports all its beneficial uses. Where presence of salts and chemicals are due to nonpoint source impacts and the source is not clear, investigations should be done to identify potential sources of these contaminants and practices should be developed to mitigate these impacts. Where areas of the Basin are threatened with increasing salinity, practices should be developed to reduce these impacts.

Priority: High

Current Action: Focus efforts on a key subbasin. Solicit assistance from local water agencies within the Kings Groundwater Subbasin by meeting with the agencies and stakeholders and explaining the purpose and need for a groundwater monitoring network. Form an advisory group for this groundwater subbasin.

Current Resources: 1) Staff – 0.025 PY for FY 02/03, 0.025 PY for FY 03/04

2) Contract(s) -- $10,000 per year

3) Source(s) -- Regional Board and State Board

Additional Action: The funding for the primary action is just enough to do some outreach to water districts, resource agencies and the public without being able to actually develop and lead the implementation of any studies recommended by the advisory group. If additional resources become available the primary action will be expanded to decide on methodology to identify trends within the subbasin. Develop a list of desired constituents of interest. Implement the methodology identified by the advisory group, and expand the approach to include additional subbasins.

Additional Resource Requirements:

1) Staff -- 3.0 PY per year

2) Contract(s) -- $75,000 per year

3) Source(s) -- State Board

Issue 2: **Groundwater Quality Objectives for Salinity**

Discussion: The Basin Plan contains water quality objectives for control of salinity increases in groundwater. These objectives allow for what was believed to be reasonable increases in certain areas of the basin based on land use in these areas. These objectives have never been revisited for effectiveness or practicality. A study should be conducted on the appropriateness of the objectives.

Current Action: Evaluation of the objectives must be deferred until a groundwater monitoring network is completed. In the meantime, the groundwater information and estimates used as a basis for the First Edition of the Basin Plan will be revisited to make an updated prediction of what data from the groundwater monitoring network might show.

Priority: High

Current Resources:

1) Staff – 0.025 PY for FY 02/03, 0.025 PY for FY 03/04

2) Contract(s) -- $0

3) Source(s) -- Regional Board and State Board

Additional Action: The funding for the primary action is just enough to do some public outreach without being able to actually assess the information in the

First Edition of the Basin Plan. Additional resources are needed to review the information and update the predictions.

Additional Action Resource Requirements:

1) Staff -- 1.0 PY

2) Contract(s) -- $0

3) Source(s) -- State Board

Issue 3: **Electrical Conductivity Effluent Limit**

Discussion:

The Basin Plan contains electrical conductivity effluent limits for discharges of municipal and domestic, industrial, and oil field wastewaters. Municipal and domestic discharges are limited to the electrical conductivity (EC) of the source water plus 500 micromhos per centimeter (μmhos/cm).

Industrial dischargers are required to meet an EC limit of the source water plus 500 μmhos/cm unless it can be demonstrated that allowing a greater net incremental increase in EC will result in lower mass emissions of salt and in conservation of water. Industrial dischargers are also allowed an exception if the increased EC is due to an unavoidable concentration of organic dissolved solids from the raw food product. In both these exceptions, beneficial uses must still be protected.

Oil field dischargers are generally required to meet a limit of 1,000 μmhos/cm unless the discharger can successfully demonstrate to the Regional Board in a public hearing that the proposed discharge will not substantially affect water quality nor cause a violation of water quality standards.

The Regional Board has been requested by municipal dischargers to revise the EC effluent limit in order to take into consideration water conservation measures. Suggestions from commenters were to develop an EC credit for calcium, potassium, and magnesium, allow the exception of increased EC due to unavoidable concentrations of organic dissolved solids from raw food products extend to dischargers other than food processors, and apply the 500 μmhos/cm increase to receiving rather than source water.

Priority:

High

Current Action:	The characteristics of the municipal wastewaters will be studied to determine typical mineral composition, sources of atypical salt concentrations, and alternative salinity control measures. The reuse of certain salts as agricultural amendment will be evaluated as a potential credit. In addition, water conservation measures will be studied to determine the overall effect on electrical conductivity increase.
Current Resources:	1) Staff – 0.025 PY for FY 02/03, 0.025 PY for FY 03/04 2) Contract(s) -- $0 3) Source(s) -- Regional Board and State Board
Additional Action:	The funding for the primary action is just enough to do some public outreach without being able to actually study the characteristics of municipal wastewater. Additional resources are needed to conduct the evaluation.
Additional Action Resource Requirements:	1) Staff -- 1.0 PY 2) Contract(s) -- $30,000 3) Source(s) -- State Board

Issue 4: **Waivers**

Discussion:	The Basin Plan includes a list of discharge types that the Regional Board did not expect to pose a threat to water quality and; thus, conditionally waived waste discharge requirements. Section 13269 of the California Water Code allows these existing waivers to remain in effect until 1 January 2003. After that, they may be renewed by the Regional Board in five-year increments after a review conducted at a public hearing. However, prior to adopting a waiver, the Regional Board must first comply with requirements of the California Environmental Quality Act.
Priority:	High
Current Action:	The State Board is working with the nine Regional Water Quality Control Boards to develop an implementation plan to efficiently review existing waivers. Each Regional Water Quality Control Board has developed a list of the waiver categories that need to be evaluated and what regulatory options currently exist to handle each category.

Current Resources:

1) Staff -- 1 PY per year from regulatory, nonpoint source, and agricultural drainage programs.

2) Contract(s) -- $0

Additional Action:

Adoption of waivers and regulation of discharges with waste discharge requirements are not subject to the basin planning process. However, if management options such as prohibitions and time schedules are to be included in the Basin Plan, amendments may be needed. Actual tasks cannot be identified prior to examining each waiver category.

Additional Resource Requirements:

1) Staff – 0.5 PY for three years to oversee and administer each basin plan amendment (There may be a cost savings by amending both Basin Plans at once. Assuming that the work to substantiate the basin plan amendment is performed in the Sacramento and San Joaquin Rivers Basin and the Tulare Lake Basin and will be completed by the current resources that were redirected from regulatory, agricultural drainage and nonpoint source resources.)

2) Contract(s) - $0

Issue 5: **Salinity in the Lower Kings River**

Discussion:

The Lower Kings River cannot meet water quality objectives for salinity during periods of low flow. Additional studies are needed to adequately define the salinity problems and develop policies.

Priority:

High

Current Action:

Continue to identify high salinity dischargers and take necessary enforcement action.

Current Resources:

1) Staff – 0.025 PY for FY 02/03, 0.025 PY for FY 03/04

2) Contract(s) -- $0

3) Source(s) -- Regional Board and State Board

Additional Action:

If low flow conditions occur during this triennial review period, conduct studies to determine source of salinity problems, identify salinity impacts both locally and regionally, and develop potential mitigation measures.

Additional Action Resource Requirements:

1) Staff -- 1 PY

2) Contract(s) -- $20,000

3) Source(s) -- State Board

Issue 6: **Dissolved Oxygen Objectives**

Discussion: The dissolved oxygen objective for Reach III of the Kings River (Pine Flat Dam to the Friant-Kern Canal) may not be achievable due to natural conditions. A study should be conducted to investigate this and establish more appropriate objectives, if necessary. Commenters have suggested that the dissolved oxygen objective for Reach III of the Kings River should be revised from a minimum of 9.0 milligrams per liter (mg/l) to 7.0 mg/l.

Priority: Medium

Current Action: None

Current Resources: None

Additional Action: The Kings River Conservation District has supplied dissolved oxygen monitoring data for the powerhouse and for selected points within the affected reach. This information should be analyzed to determine the dissolved oxygen concentration that this reach can reasonably attain.

Additional Action Resource Requirements:

1) Staff -- 0.5 PY

2) Contract(s) -- $0

3) Source(s) -- State Board

Issue 7: **Total Maximum Daily Load**

Discussion: The Tulare Lake Basin has three waterbodies on the 303(d) list. The San Carlos Creek was listed for mercury; Panoche Creek was listed for sediments, selenium and mercury; and the Lower Kings River was listed for molybdenum, toxaphene and electrical conductivity. All Total Maximum Daily Loads (TMDLs) are scheduled to start January 2004. However, if funding were available, the Regional Board could consider plans for early development and implementation of TMDLs for the listed waterbodies in the Tulare Lake Basin.

Priority: Medium

Current Action: None

Current Resources: None

Additional Action: Conduct monitoring for listed constituents, develop and calibrate water quality models characterizing the system, calculate the total constituent loads the streams may handle, allocate loads to the sources.

Additional Action Resource Requirements:

1) Staff -- 6.0 PY

2) Contract(s) -- $30,000

3) Source(s) -- State Board

Issue 8: **Salt Loads**

Discussion: In order to properly develop management measures for potential salinity sources, an understanding is needed of the salt storage which is occurring in the basin. The Department of Water Resources has completed calculations of the salts which are imported and exported through the water projects but has not included salts which are imported and exported through food sources (both for human and animal consumption) and soil amendments.

Priority: High

Current Action: None

Current Resources: None

Additional Action: Work with the county farm advisors, city and county planners, and the Department of Water Resources to quantify the salts which are imported as food and soil amendments and the salts exported as products from the basin. Calculate the salts which are stored in the basin. Develop strategies to reduce the salt imports or export the excess salt.

Additional Action Resource Requirements:

1) Staff -- 1.5 PY

2) Contract(s) -- $20,000

3) Source(s) -- State Board

Issue 9: **Ammonia Objectives**

Discussion: The Basin Plan does not contain a numerical water quality objective for ammonia. In determining permit limits, staff relies on application of the narrative objective. Limits are placed in permits that take into account ammonia toxicity information, receiving water characteristics, available dilution, and other considerations. Staff also relies on the 1991 USEPA Technical Support Document that discussed permit derivation procedures. The narrative toxicity objective indicates that the Regional Board can use available information to assist in determining compliance with the objective. Therefore, the information that is contained in the USEPA Technical Support Document can be used by staff to derive permit limits. However, water quality objectives apply to more than permit holders so the lack of appropriate water quality objectives could be impairing the Regional Board's ability to protect the region's waters.

Priority: Low

Current Action: None

Current Resources: None.

Additional Action: Develop water quality objectives for ammonia. Staff will work with interested stakeholders to finalize ammonia objectives.

Additional Resource Requirements:

1) Staff – About 1 PYs for two years

2) Contract(s) -- $0

Issue 10: **Chlorine Objectives**

Discussion: The Basin Plan does not contain a numerical water quality objective for chlorine. In determining permit limits, staff relies on application of the narrative objective. Limits are placed in permits that take into account chlorine toxicity information, receiving water characteristics, available dilution, and other considerations. The narrative toxicity objective indicates that the Regional Board can use available information to assist in determining compliance with the objective. However, water quality objectives apply to more than permit holders so the lack of appropriate water quality objectives could be impairing the Regional Board's ability to protect the region's waters.

Priority: Low

Current Action:	None
Current Resources:	None
Additional Action:	Develop water quality objectives for chlorine. Staff will work with interested stakeholders to finalize ammonia objectives.
Additional Resource Requirements:	1) Staff – About 1 PYs per year for two years 2) Contract(s) -- $0

Issue 11: **Dissolved Oxygen Objectives**

Discussion:	The Basin Plan includes general dissolved oxygen objectives that apply to all water bodies designated as supporting warm freshwater habitat, cold freshwater habitat, and fish spawning. The objectives are applied as minimum levels that are not to be exceeded at any time. These objectives have existed in the Basin Plan since its original adoption in 1975. In 1986, the USEPA developed National Criteria for dissolved oxygen. The National Criteria has not been evaluated for use in the Tulare Lake Basin. However, the narrative toxicity objective in the Basin Plan indicates that the Regional Board can use available information to assist in determining compliance with the objective.
Priority:	Low
Current Action:	None
Current Resources:	None
Additional Action:	Re-evaluate the water quality objectives for dissolved oxygen. Staff will work with interested stakeholders to finalize dissolved oxygen objectives.
Additional Resource Requirements:	1) Staff – About 1 PYs per year for two years 2) Contract(s) -- $0

Issue 12: **Confined Animal Facilities**

Discussion: Commenter suggested that a Cumulative Impact Study is needed to assess the impact to groundwater and surface water from all bovine animals in the Tulare Lake Basin and projected to come into the Tulare Lake Basin within the next three years.

Priority: Medium

Current Action: None

Current Resources: None

Additional Action: Work with county farm advisors, county planners, dairy and cattleman's associations to quantify the number of animal units currently in the basin and projected increases from birth, as well as, imports. Quantify and calculate the amount of salts and nutrients contributed to ground and surface waters.

Additional Action Resource Requirements:

1) Staff -- 2 PY

2) Contract(s) -- $0

2) Source(s) -- State Board

Issue 13: **Carbonaceous Biochemical Oxygen Demand (BOD) Test**

Discussion: The Basin Plan requires the larger but isolated municipal wastewater facilities to remove 80 percent or reduction to 40 mg/L, whichever is more restrictive, of both 5-day BOD and suspended solids. This minimum performance standard was developed to preclude odor nuisance conditions. USEPA has recognized that trickling filters may be designed and operated properly to meet federal secondary standards but still not achieve compliance standards, and consequently allows use of alternative secondary standards where actual operating performance warrants it. Commenter suggested the Basin Plan be amended to allow for the use of the Carbonaceous BOD Test in meeting the alternative secondary standards.

Priority: Low

Current Action: None

Current Resources: None
Additional Action: Modify Basin Plan

Additional Action Resource Requirements:

1) Staff – 0.5 PY

2) Contract(s) -- $0

3) Source(s) -- State Board

Issue 14: **Implementing Narrative Objectives in Impaired Waters**

Discussion: The USEPAs water quality standards regulation at 40 CFR section 131.11(a)(2) requires that "[w]here a State adopts narrative criteria for toxic pollutants to protect designated uses, the State must provide information identifying the method by which the State intends to regulate point source discharges of toxic pollutants on water quality limited segments based on such narrative criteria." Commenter states that the Regional Board should ensure that the Basin Plan includes procedures for implementing any and all narrative criteria that may be used to regulate point source discharges of toxic pollutants to impaired water bodies. The Tulare Lake Basin has three waterbodies on the 303(d) list. All TMDLs are scheduled to start January 2004. Development and implementation of the TMDLs could include basin plan amendments which may provide numeric objectives. However, if narrative criteria are a part of a TMDL, procedures for implementing any and all narrative criteria will be provided.

Priority: Medium

Current Action: None

Current Resources: None

Additional Action: Modify Basin Plan

Additional Action Resource Requirements:

1) Staff – 1.5 PY

2) Contract(s) -- $50,000

3) Source(s) -- State Board

Issue 15: **Redesignation of Beneficial Uses of Groundwater**

Discussion:	The designated beneficial uses for groundwater below two landfill sites in Kern County (Taft Sanitary Landfill and China Grade Sanitary Landfill) include domestic supply (MUN), industrial service supply (IND), and agricultural supply (AGR). Commenter proposes that all or some of the beneficial uses may not apply to the groundwater below these two landfills and proposes the redesignation of the beneficial uses below the two landfills.
Priority:	High
Current Action:	None
Current Resources:	None
Additional Action:	Modify Basin Plan.
Additional Action Resource Requirements:	1) Staff -- 1 PY 2) Contract(s) -- $20,000 3) Source(s) -- State Board